UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,640	10/18/2004	Weixiao Liu	PU020138	6427

24498   7590   07/31/2007
JOSEPH J. LAKS, VICE PRESIDENT
THOMSON LICENSING LLC
PATENT OPERATIONS
PO BOX 5312
PRINCETON, NJ 08543-5312

EXAMINER
BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
07/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/511,640	LIU ET AL.
	Examiner	**Art Unit**	
	Kevin M. Burd	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/18/2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

1.   This office action, in response to the remarks filed 5/16/2007, is a final office

action.

Response to Arguments

2.   The objection to the oath, declaration or application data sheet is withdrawn.

3.   The objection to the drawings is maintained. It is unclear how the receiver shown

in figure 1 is not prior art when Wang (US 6,266,380) discloses the same figure 1. The

components of figure 1 of Wang are the same as the instant application's figure 1.

4.   Applicant's arguments filed 5/16/2007 have been fully considered but they are

not persuasive. Applicant states Shanley does not calculate a preselected number of

offset values and testing each of the preselected offset values. The examiner disagrees.

As stated previously, Shanley states "the recovery apparatus effectively functions to

'sweep' the oscillator's free running frequency in discrete steps from a remote range

edge frequency in a direction lessening the difference between oscillator frequency and

subcarrier frequency" in column 12, lines 52-64. Each of the discrete steps is a

frequency offset value and each offset will be tested to see if a lock has occurred

between the oscillator frequency and the subcarrier frequency. The discrete steps are

the frequency offset values since the steps are the difference between the present

frequency and the starting frequency. The sweeping of the frequency in these discrete

steps (offsets) will continue until a frequency lock occurs (column 12, lines 52-64).

Therefore, the receiver always determines if the present frequency is locked with the

subcarrier frequency.

Applicant states there is no reason or motivation to combine the Shanley and Wang. The examiner disagrees. As stated in the previous office action, it would have been obvious for one of ordinary skill at the time of the invention to combine the signal of Wang into the method and processor of Shanley. This would allow the received HDTV signal to be synchronized between the transmitter and receiver. This allows the recovery of the data to be performed correctly and with minimal errors.

Applicant states there is not reason or motivation to combine the Shanley with Guillemain. The examiner disagrees. As stated in the previous office action, Guillemain discloses using the Mueller and Muller algorithm and the Gardner algorithm for timing recovery (column 5, lines 9-13). These algorithms are well known in the art and it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize these well known algorithms to recover the proper timing of the carrier received in the method and processor of Shanley. Achieving fast and correct timing by using these algorithms is important since demodulation and further processing of the received signal cannot occur until phase lock is established.

For these reasons and the reasons stated in the previous office action, the rejections of the claims are maintained and stated below.

Drawings

5.   Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Figure 1 is the same as figure 1 of Wang (US 6,266,380) See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are

required in reply to the Office action to avoid abandonment of the application. The

replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as

per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the

changes are not accepted by the examiner, the applicant will be notified and informed of

any required corrective action in the next Office action. The objection to the drawings

will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 1, 3-6, 8 and 10-13 are rejected under 35 U.S.C. 102(b) as being

anticipated by Shanley, II (US 4,617,587).

Regarding claims 1 and 8, Shanley discloses a method of synchronizing the

received clock and a local clock in a receiver. Shanley states "the recovery apparatus

effectively functions to 'sweep' the oscillator's free running frequency in discrete steps

from a remote range edge frequency in a direction lessening the difference between

oscillator frequency and subcarrier frequency" in column 12, lines 52-64. Each of the

discrete steps will comprise a frequency offset and each offset will be tested to see if a

lock has occurred between the oscillator frequency and the subcarrier frequency. The

sweep will start at a central offset value and sweep away from the starting value

(column 12, lines 57-64).

Regarding claims 3-5 and 10-12, Shanley discloses the sweep will be conducted

in discrete steps and continue until the lock is attained. The number of steps can be any

number that allows this to occur including nine and the discrete steps can be any

discrete value that allows the lock to take place including 200 Hz.

Regarding claims 6, 13 and 14, the method will be conducted in any amount of

steps needed to ensure proper phase lock.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Shanley, II (US 4,617,587) in view of Wang (US 6,266,380).

Regarding claims 2 and 9, Shanley discloses the method stated above. Shanley

discloses the received signal is a color television signal (column 1, lines 12-30). Shanley

does not disclose the received signal carries a high definition television (HDTV) signal

transmitted as a modulated vestigial sideband (VSB) signal formatted as a one-

dimensional data constellation of symbols representing digital image data. Wang

discloses a receiver for receiving a signal carrying an HDTV signal where the received

signal is a carrier suppressed 8-VSB modulated signal and the VSB signal is represented by a one-dimensional data symbol constellation (column 1, line 66 to column 2, line 11). Wang further discloses an all digital phase lock loop is used for timing recovery (column 2, lines 33-43). It would have been obvious for one of ordinary skill at the time of the invention to combine the signal of Wang into the method and processor of Shanley. This would allow the received HDTV signal to be synchronized between the transmitter and receiver. This allows the recovery of the data to be performed correctly and with minimal errors.

8.   Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanley, II (US 4,617,587) in view of Guillemain et al (US 6,175,600).

Regarding claims 7 and 15, Shanley discloses a method and processor for establishing timing synchronism between the oscillator frequency and the subcarrier frequency as stated above. Shanley does not disclose the specific type of recovery algorithms used. Guillemain discloses using the Mueller and Muller algorithm and the Gardner algorithm for timing recovery (column 5, lines 9-13). These algorithms are well known in the art and it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize these well known algorithms to recover the proper timing of the carrier received in the method and processor of Shanley. Achieving fast and correct timing by using these algorithms is important since demodulation and further processing of the received signal cannot occur until phase lock is established.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd
7/25/2007

KEVIN BURD
PRIMARY EXAMINER